

California State Plan for Municipal Waste Combustors

**Stationary Source Division
Emissions Assessment Branch**

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**State of California
California Environmental Protection Agency**

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TABLE OF CONTENTS

<u>Contents</u>	<u>Page</u>
EXECUTIVE SUMMARY	1
I. INTRODUCTION	4
II. OVERVIEW OF FEDERAL REQUIREMENTS	5
III. STATE PLAN REQUIREMENTS	6
1. Demonstration of Legal Authority	6
2. Identification of Enforceable Mechanism	7
3. Facility and Emission Inventories	8
4. Emission Standards	8
5. Test Methods, Monitoring, Recordkeeping, and Reporting Requirements	8
6. Compliance Schedules and Increments of Progress	9
7. Public Participation	10
IV. IMPLEMENTATION OF THE EMISSION GUIDELINES	10
REFERENCES	11

ATTACHMENTS

Attachment A - California State Attorney General's Certification of Legal Authority

Attachment B - District Operating Permits

Attachment C - Municipal Waste Combustor Facility and Emission Inventories

Attachment D - Public Participation

Attachment E - Demonstration of Equivalency Between Standardization to 12% CO₂ vs 7% O₂

Attachment F - Justification of Alternate Increments of Progress

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Municipal Waste Combustors**

EXECUTIVE SUMMARY

On December 19, 1995, the United States Environmental Protection Agency (U.S. EPA) promulgated regulations for Municipal Waste Combustors (MWC) implementing sections 111 and 129 of the federal Clean Air Act (FCAA). The regulation, entitled "Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Municipal Waste Combustors" includes New Source Performance Standards (NSPS) for new municipal waste combustors and Emission Guidelines (Guidelines) for existing municipal waste combustors. U.S. EPA issued a final rule amending the regulation on August 25, 1997. For existing MWC units (those constructed on or before September 20, 1994), the regulation requires that each state develop and submit a "State Plan" to the U.S. EPA which identifies how the federal requirements outlined in the Guidelines will be satisfied. This document, developed by the California Air Resources Board (ARB) in cooperation with the affected air pollution control and air quality management districts (districts), represents California's State Plan to implement the Emission Guidelines.

1. What do the federal regulations require?

The regulations (Title 40, Code of Federal Regulations, Part 60, Subpart Cb and Subpart Eb) affect new and existing MWC units with capacities to combust more than 250 tons of municipal solid waste (MSW) per day. Units with capacities less than 250 tons per day are not addressed by the regulations. It is important to understand that these regulations affect individual MWC units and not MWC facilities. MWC facilities with multiple units must ensure that each unit complies with the requirements independently of any other units.

The regulation establishes emission limits for particulate matter (PM), cadmium (Cd), lead (Pb), mercury (Hg), sulfur dioxide (SO₂), hydrochloric acid (HCl), dioxins and furans, carbon monoxide (CO), and oxides of nitrogen (NO_x), and includes requirements for opacity and ash handling. It also promotes good combustion practices, and includes requirements for testing, monitoring, recordkeeping and reporting, and operator training and certification.

2. Why were the federal regulations developed?

The U.S. EPA was required under sections 111 and 129 of the FCAA, as amended in 1990, to develop and adopt performance standards and Guidelines for MWC units based on maximum achievable control technology (MACT) to address public concerns about MWC's and other solid waste combustion units. According to U.S. EPA, much of the public concern from MWC emissions focused on the perceived level of dioxin and furan emissions as well as the tendency for many MWC units to be located in federal non-attainment areas. Emissions from MWC sources also contain other pollutants which can have adverse effects on the public health. U.S. EPA believes that the NSPS and Guidelines will significantly reduce emissions from MWCs nationwide.

3. How many MWC's in California will be affected by the Guidelines?

In California, there are three active MWC facilities that will be affected by the Guidelines. Combined, these facilities represent six MWC units, each of which has the capacity to combust greater than 250 tons of MSW per day. Two of the facilities are located in the South Coast Air Quality Management District (SCAQMD) and the third is located in the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). These facilities are currently controlled employing state-of-the-art air pollution control technology and require only minor upgrades to their control systems in order to ensure continuous compliance with the new emission standards. Additionally, all three facilities will need to satisfy operator training and certification requirements and the recordkeeping and reporting requirements. The facilities have already begun to address these issues. None of the facilities will be affected by the NSPS; however, new MWC facilities that are constructed in California will be required to meet the requirements of the NSPS as well as other district requirements.

4. What is the purpose of the State Plan?

The purpose of the State Plan is to implement the requirements of the Guidelines for existing MWC units specified in 40 CFR Part 60 Subpart Cb (Emission Guidelines and Compliance Times for Existing MWCs that are Constructed on or Before September 20, 1994). Additionally, sections 111 and 129 of the FCAA and the Guidelines require the ARB to submit an approvable State Plan to the U.S. EPA Regional Administrator. A state plan is not required for new MWC facilities, or facilities constructed after September 20, 1994, because they are subject to the NSPS.

5. What is contained in the State Plan?

The major elements of the State Plan, as outlined in 40 CFR Part 60 Subpart B (Adoption and Submittal of State Plans for Designated Facilities), are:

- ▶ a demonstration of the state's legal authority to carry out the State Plan;
- ▶ identification of an enforceable mechanism for implementing the Guidelines;
- ▶ an inventory of applicable sources and emissions from those sources;
- ▶ emission standards that are at least as health protective as those in the Guidelines;
- ▶ compliance schedules;
- ▶ testing, monitoring, and recordkeeping and reporting requirements;
- ▶ opportunity for public participation on the State Plan; and,
- ▶ provisions for progress reports to U.S. EPA.

The key component of the State Plan is the enforceable mechanism which is developed by the districts to implement the State Plan. In California, the affected districts have decided to use operating permits that have been modified to reflect the requirements of the Guidelines as the enforceable mechanism. A more detailed discussion of each element is given in Section III.

I. INTRODUCTION

This document is California's "State Plan" for implementing and enforcing the requirements of the Emission Guidelines (Guidelines) for municipal waste combustors (MWCs) as required under the federal Clean Air Act (FCAA) as amended in 1990. The United States Environmental Protection Agency (U.S. EPA) was required under sections 111 and 129 of the FCAA to develop and adopt performance standards and emission guidelines for MWCs based on maximum achievable control technology (MACT). The performance standards and guidelines are intended to address public concerns about emissions from MWCs.

This regulation, entitled "Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Municipal Waste Combustors" codified in Title 40 Code Of Federal Regulations (CFR), Part 60, Subpart Cb and Subpart Eb, was promulgated by the U.S. EPA on December 19, 1995, and contains New Source Performance Standards (NSPS) for new MWC units and Emission Guidelines (Guidelines) for existing MWC units. The NSPS and Guidelines are based on the U.S. EPA Administrator's determination that MWCs cause or contribute significantly to air pollution that may be reasonably anticipated to endanger public health or welfare (60 Federal Register 65387, December 19, 1995). In addition to the requirements applicable to each MWC unit, the regulation also requires that each state develop and submit for U.S. EPA approval a section 111/129 State Plan to implement and enforce the requirements of the Guidelines for existing MWC units. Pursuant to section 129 and Title 40 CFR Part 60, Subpart B (Adoption and Submittal of State Plans for Designated Facilities), the plan is to include a listing of affected facilities, an emissions inventory, emission standards at least as health protective as those given in the Guidelines, compliance times, procedures used for determining compliance with the emissions standards, a demonstration of legal authority to carry out the state plan, a record of public participation, a legally enforceable mechanism for implementing the Guidelines, provisions for progress reports to U.S. EPA, and legally enforceable increments of progress towards compliance.

As a result of these regulations, the California Air Resources Board (ARB) is submitting this document as the State Plan for MWCs in California. This State Plan is organized to present an overview of the requirements of the Guidelines. It includes a discussion of how California has satisfied the required elements of the State Plan, and contains a series of attachments which present the documentation of those elements, where appropriate. The attachments are organized as follows:

Attachment A: This section contains the California State Attorney General's certification that the laws of the State of California provide adequate authority to implement and enforce the requirements of the Emission Guidelines. Additionally, a listing of district rules applicable to permitting from the affected districts is provided.

- Attachment B: This section contains copies of the district operating permits for each MWC unit at each facility. The permits have been modified so that the facilities must comply with the requirements of the Emission Guidelines.
- Attachment C: This section presents an inventory of all the MWC facilities in California to which the Guidelines apply. It gives the physical location of each facility, summarizes the air pollution control equipment that is used, and gives the operational status. It also includes an inventory of emissions for the designated pollutants.
- Attachment D: This section documents the opportunities the public has had to provide comments.
- Attachment E: This section demonstrates the equivalency between standardizing emission rates to 12% CO₂ or 7% O₂.
- Attachment F: This section contains the justification for the alternate increments of progress used by one of the affected facilities.

II. OVERVIEW OF FEDERAL REQUIREMENTS

The NSPS and Guidelines apply to MWC units with capacities to combust more than 250 tons of municipal solid waste (MSW) per day. MWC units constructed after September 20, 1994, are considered new units and must satisfy the requirements of the NSPS. Units constructed on or before September 20, 1994, are considered existing units and must satisfy the requirements of the Guidelines which are covered by this State Plan.

The NSPS and Guidelines are similar in structure, but the NSPS contains stricter emission limits and includes siting requirements for new MWC's. Additionally, the NSPS establishes requirements for sources and can be adopted by reference by each air pollution control or air quality management district (district). The Guidelines, however, do not contain direct requirements for existing sources. Instead, sections 111 and 129 of the Guidelines require states, and in California, the ARB and affected districts, to submit a State Plan to the U.S. EPA Regional Administrator.

The Guidelines include emission limits for nine pollutants, as well as requirements for operator training and certification, recordkeeping, monitoring, and facility operation. Emission limits for particulate matter (PM), cadmium (Cd), lead (Pb), mercury (Hg), sulfur dioxide (SO₂), hydrochloric acid (HCl), dioxins and furans, carbon monoxide (CO), and oxides of nitrogen (NO_x) and requirements for stack opacity and ash handling are established. Total emissions at a facility are not aggregated to determine compliance with the emission standards; therefore, if a

MWC facility has more than one MWC unit, each unit at the facility is required to satisfy the requirements of the Guidelines independently of any other units at the facility.

U.S. EPA has also included requirements for the training and certification of main facility operators and shift supervisors. Facility operators and shift supervisors must be certified as MWC operators through the American Society of Mechanical Engineers (ASME) or an equivalent state program which emphasizes the importance of good combustion practices. In California, one equivalent program is the ASME program, QRO-1-1994, "Standard for the Qualification of Resource Recovery Facility Operators" which the affected facilities will be using to satisfy the operator training and certification requirements.

The ARB has identified three operating MWC facilities which are affected by the Guidelines (ARB, 1991; IWSA, 1996). Two of the facilities are located in the South Coast Air Quality Management District (SCAQMD) and the third is located in the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). The three facilities account for a total of six MWC units, each with a capacity greater than 250 tons per day.

III. STATE PLAN REQUIREMENTS

This section discusses the elements required in the State Plan pursuant to 40 CFR Part 60 Subpart B and Subpart Cb and shows how California has satisfied those requirements. Under each area, the appropriate references in Subpart B and Subpart Cb have been provided.

1. Demonstration of Legal Authority (Ref. 60.26(a) of Subpart B)

Each state is required to demonstrate that it has the necessary legislative framework in place that shows that the State and the districts have the authority to implement and enforce the requirements of the Guidelines. The California Legislature has already established this framework in the California Health and Safety Code (HSC). Pursuant to the HSC, the districts have the primary responsibility over stationary sources. The HSC gives them the authority to develop and implement rules or impose permit conditions to control emissions from stationary sources necessary to protect the public health.

Attachment A presents the letter of certification from the California State Attorney General certifying that the laws of the State of California and the districts provide adequate authority to carry out the Section 111/129 State Plan to implement and enforce the requirements of the Guidelines for municipal waste combustors. Additionally, a listing of the applicable rules for affected each district is provided.

2. Identification of Enforceable Mechanism
(Ref. 60.24(a) of Subpart B)

Having demonstrated adequate legal authority to carry out the State Plan, each district is required to identify the enforceable mechanism that will be used to implement the Guidelines. In California, the affected districts have four mechanisms that they can utilize: a U.S. EPA adopted federal plan, a district rule, a federal Title V operating permit, or a modified district operating permit.

a. Districts Allow U.S. EPA to Adopt a Federal Plan

Each district has the option of not taking any action to ensure compliance with the Guidelines. Under this scenario, the regulation requires U.S. EPA to adopt and implement a federal plan in lieu of a state plan. This federal plan would most likely be the same for all sources nationwide and would limit each district's ability to address source-specific needs. The affected districts did not select this option.

b. Adoption of a District Rule

The districts have the option of adopting a district rule that contains requirements at least as protective as those in the Guidelines. Unlike the NSPS, the Guidelines cannot be simply incorporated into the district's rulebooks. The districts are required to conduct their normal rulemaking process and incorporate the requirements into a rule format. Since the rulemaking process is resource intensive, the affected districts decided that the development of a rule for MWCs would not be an appropriate means to satisfy the requirements due to the small number of affected facilities.

c. Federal Title V Permits

Sources that are subject to section 111 of the FCAA are also subject to Part 70, which requires these sources to apply for a federal Title V permit within one year of approval of the State Plan. However, the U.S. EPA requires that the enforceable mechanism must be in effect at the time the State Plan is submitted for approval. Although the California State Attorney General has certified that the districts have the authority to issue Title V permits as the enforceable mechanism, both the SJVUAPCD and the SCAQMD have determined that Title V permits could not be finalized in timely manner. Each facility, however, is still required to submit its Title V application to the district within one year after U.S. EPA approval of the State Plan.

d. District Operating Permits

The MWCs in California are issued a district operating permit and the California State Attorney General has certified that the districts have the authority to modify these permits and incorporate the requirements presented in the Guidelines. Considering the number of MWC sources, this approach is the most expedient. The SJVUAPCD and the SCAQMD, with the

support of their respective facilities, decided to use the district facility operating permits as the enforceable mechanism. Using existing permitting and nuisance rules, the district operating permits have been modified to contain emission limits at least as protective as those stated in the Guidelines and the required elements for testing, monitoring, recordkeeping, reporting, compliance schedules and operator training and certification. Attachment B contains copies of the district operating permits as the enforceable mechanism for each of these facilities.

3. Facility and Emission Inventories
(Ref. 60.25(a) and 60.25(c) of Subpart B)

An inventory of the MWCs and their emissions of the designated pollutants is required for the State Plan. The ARB compiled a listing of the MWCs using information obtained from the districts, previous ARB surveys, and the 1996 Integrated Waste Services Association (IWSA) directory. This inventory listing, presented in Table C-1 of Attachment C, includes the location of each facility, the capacity of each MWC unit in tons per day (tpd), and a summary of the installed control equipment.

The ARB has also compiled a summary of emissions data from each facility based on the most recent source test reports on file at the districts. The summary, presented in Table C-2 of Attachment C, compares the emission rates from the source tests to the emission limits given in the Guidelines. Table C-3 presents the annual emission rate in tons per year. For each facility, the equivalent annual emissions based on the U.S. EPA emission limits were calculated and compared to the emissions each MWC unit emitted.

4. Emission Standards
(Ref. 60.24(b)(1) of Subpart B and 60.33b, 60.34b, 60.35b, 60.36b, and 60.37b of Subpart Cb)

The State Plan is required to include emission standards that are at least as protective as the Guidelines. This allows the districts to consider more stringent limits should they be determined to be necessary to protect the public health. In addition to the emission limits for the nine designated pollutants, the State Plan must include provisions for good combustion practices and the training and certification of MWC operators. The affected districts have complied with these requirements by incorporating the new emission standards and operation and training requirements as presented in the Guidelines into the operating permits for each MWC unit (see Attachment B).

5. Test Methods, Monitoring, Recordkeeping, and Reporting Requirements
(Ref. 60.24(b)(2) and 60.25 of Subpart B and 60.38b and 60.39b of Subpart Cb)

In addition to the emission standards, the SJVUAPCD and the SCAQMD have modified the operating permits of their MWCs to contain the required elements for testing, monitoring, recordkeeping, and reporting. Specifically, periodic performance tests (source tests) and continuous emissions monitoring systems (CEMS) are required and the sources must maintain

records for at least five years. The districts do have the option of selecting alternative test methods provided that the district demonstrates that they are equivalent to those specified in 40 CFR Part 60, Appendix A. At this time, neither of the affected districts is seeking the use of alternative test methods; however, SJVUAPCD is requiring the standardization of emission rates to 12% CO₂ (carbon dioxide) as opposed to 7% O₂ (oxygen). In accordance with section 60.58b of Subpart Eb, referenced by section 60.38b of Subpart Cb, the relationship between O₂ and CO₂ can be established during a performance test. This demonstration is provided in Attachment E.

Additionally, each state is required to submit annual reports to the U.S. EPA on each facility's progress of complying with the Guidelines. At a minimum, this annual report is to include the compliance status of a facility, a listing of any enforcement actions, the status of any applicable increments of progress, and any updated facility or emissions inventory information compiled from source tests. Each source must maintain each annual report for five years as a part of their overall recordkeeping and make them available to the district, ARB, and U.S. EPA representatives upon request. Because of the small number of affected facilities, it is reasonable to allow each facility to select a reporting format they feel is necessary to convey the required information (e.g. a letter or short report with supporting documentation). The ARB suggests that each source submit their annual reports to their district, ARB, and U.S. EPA Region IX simultaneously.

6. Compliance Schedules and Increments of Progress
(Ref. 60.21(h), 60.24(a), and 60.24(e)(1) of Subpart B and 60.39b of Subpart Cb)

Districts using a compliance schedule of more than one year for any provision contained in a MWC operating permit are required to have that provision satisfied by three years after U.S. EPA's approval of the State Plan or December 19, 2000, whichever is earlier. Facilities are also required to show measurable increments of progress towards compliance. Pursuant to Section 60.21(h) of Subpart B, those increments must include: a final control plan or description of the work to be done; dates for awarding contracts for any construction or related purchases; dates for initiating and completing the construction or installation of control equipment or process changes; and, a final demonstration of compliance. Two MWC facilities have identified the need to make process changes they feel are necessary to ensure continuous compliance with the emission standards. A compliance schedule with measurable increments of progress, as specified in Section 60.21(h) of Subpart B, has been included in the operating permits for these facilities. Additionally, since one of the facilities has requested a increments of progress significantly different than U.S. EPA's preferences, this facility has provided written justification for its alternate schedule. This justification is provided in Attachment F. Increments of progress are not required for schedules that require final compliance within one year of U.S. EPA approval of the State Plan.

7. Public Participation
(Ref. 60.23(f)(1) and 60.23(f)(2) of Subpart B)

Each state is required to present documentation that the public had an opportunity for public participation in developing the state plan. Public participation can be in the form of a public meeting or other alternative procedures approved by U.S. EPA. To satisfy the public participation requirements, the affected districts used their normal public notification procedures to inform the public of the State Plan. This included placing public notices in newspapers that serve residents around each facility to alert them of the State Plan, informing the public where a copy of the State Plan can be obtained, providing an address to forward comments, and the procedures for the public to request a hearing. A public hearing was not requested in the SCAQMD; however, the SJVUAPCD held a public meeting on this item in conjunction with their regular board meeting. No public testimony or comments were received by either district. Records of public participation are compiled in Attachment D.

IV. IMPLEMENTATION OF THE EMISSION GUIDELINES

The two affected districts will have the responsibility of implementing the State Plan. Activities that the districts must pursue to implement and enforce the Guidelines include: ensuring that the two sources that require extended compliance schedules complete each increment of progress by deadlines specified in the operating permits; ensuring that the sources complete the operating training and certification requirements, including preparation of the site-specific training manual; ensuring that there is an annual review of the site-specific training manual; ensuring that the sources remain in compliance with the emission standards and other requirements of the Guidelines; and, ensuring that any required reports are submitted to U.S. EPA by the appropriate deadlines.

REFERENCES

ARB, 1991. Air Pollution Control at Resource Recovery Facilities: 1991 Update, California Air Resources Board, 1991.

IWSA, 1996. "The 1996 IWSA Municipal Waste Combustion Directory of United States Facilities," Integrated Waste Services Association, May 1996.